

RECORDS AND DESCRIPTIONS OF MICROLEPIDOPTERA  
FROM LORD HOWE ISLAND AND NORFOLK ISLAND  
COLLECTED BY THE BRITISH MUSEUM (NATURAL  
HISTORY) RENNELL ISLAND EXPEDITION, 1953

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I. LORD HOWE ISLAND

LORD HOWE Island lies approximately 400 miles off the east coast of Australia on a slightly more northern latitude than Sydney, and was the first South Pacific island at which we called on the voyage from Australia to the Solomons. The ship anchored off Ned's Beach, and while cargo was being unloaded we had an opportunity to get ashore for an afternoon and again for most of the following day. On the second day ashore we crossed to the S.W. side of the island, a distance of not more than a mile, and made our way along the shore of the lagoon to the foot of Mt. Lidgbird, which is over 2,500 ft. high. Beyond could be seen the more massive Mt. Gower, rising to about 2,800 ft. We climbed a few hundred feet up the lower slopes of Mt. Lidgbird, passing through a dense forest of curly palm, *Howea belmoreana*, mixed with other trees, including huge banyans covering hundreds of square yards.

The larger Lepidoptera were extremely scarce, perhaps due to the strong winds of the past few days having driven them to seek sheltered places. Only one butterfly, a *Euploea* species, was observed during the whole time ashore. A small collection of twenty-two specimens of Microlepidoptera was secured. This has proved of considerable interest and is the subject of the present paper.

The material now studied includes twelve species, of which eight are apparently new to science and are described below, and four are known Australian species. The latter constitute new additions to the faunal list of Lord Howe Island.

The collection is in the British Museum (Natural History), including types and paratypes of species here described. Colour terms used in the descriptions below have in most instances been taken from Ridgway's *Color Standards and Color Nomenclature*.

TORTRICIDAE

*Tortrix aulacana* Meyrick

*Tortrix aulacana* Meyrick, 1881, Proc. Linnean Soc. N.S. Wales, 6 : 513.

A male example captured among shrubs, "Lord Howe Island, Mt. Lidgbird, 19. viii. 1953". Genitalia slide B.M. 3772.

This species occurs in N.S. Wales and Victoria in Australia, and in Tasmania. It belongs with *Tortrix postvittana* Walker in a new genus, a description of which is now in press and will appear in *Bull. ent. Res.* **47**, pt. 1.

## OLETHREUTIDAE

*Lobesia eustales* sp. n.

♂ 5-6 mm. Labial palpus sordid white, second segment mixed with greyish fuscous. Head, thorax, antenna and scape sordid white mixed with greyish fuscous, tegula dark fuscous at base greyish fuscous at tip. Fore wing (rubbed) sordid white strongly and irregularly irrorated with greyish fuscous, markings poorly defined and diffuse, costa strigulated with dark fuscous, a dark fuscous marking at base, a dark fuscous patch on dorsum before middle, a small fuscous pretornal marking preceded by a weak circular patch of ochreous, an admixture of scattered ochreous-buff scales in discal area, termen outlined with small dark fuscous scales. Cilia greyish mixed with fuscous. Hind wing dark grey, cilia light grey.

Male genitalia (Text-fig. 1): Valva narrow, cucullus densely clothed with long setae on inner side. Sacculus with a dense apical patch of setae. Aedoeagus curved, apex obliquely truncate, acute.

Type ♂: "Lord Howe Island, Mt. Lidgbird, 19.viii.1953" Genitalia slide B.M.3786. Paratype: 1 ♂, same data as type. Both examples caught flying over shrubs on the lower slopes of Mt. Lidgbird.

An apparently distinct species recognizable by the irrorate appearance of the fore wings.

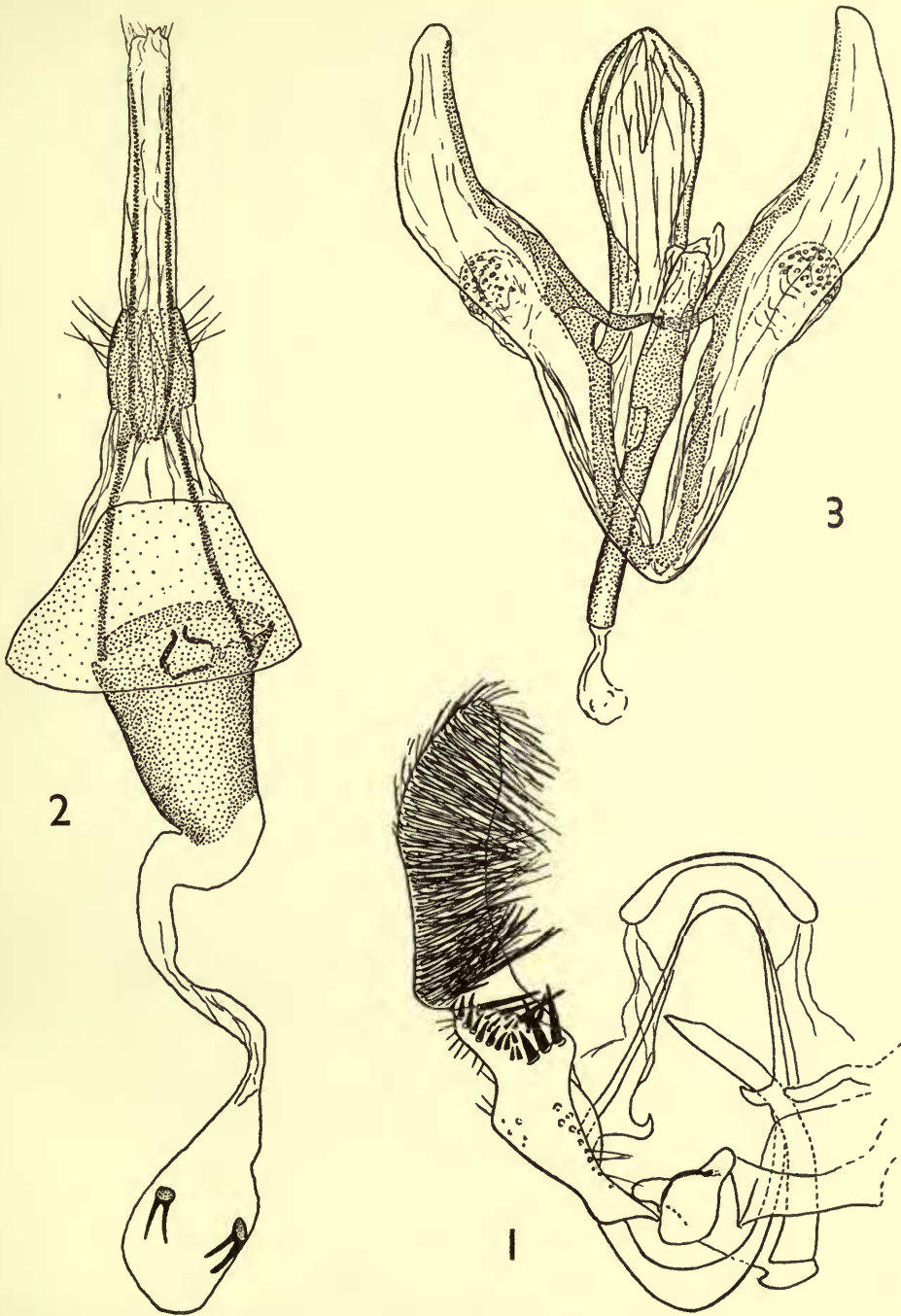
## CARPOSINIDAE

*Carposina euphanes* sp. n.

♀ 20 mm. Labial palpus about two and a half times length of head, white above, sprinkled with dark fuscous beneath. Head whitish, chaetosema pronounced and indicated by erect scales. Antenna greyish fuscous, scape whitish lightly suffused with fuscous. Thorax and tegula whitish suffused with greyish fuscous. Fore wing whitish lightly suffused with greyish fuscous, a broad fuscous mixed with pale ochreous-buff marking at base extended along costa to about 1/5, a prominent tuft of raised fuscous-black scales with an admixture of ochreous-buff in disc at 1/3 followed by two small whitish grey tufts in the lower margin of cell, one at about middle and the other at 3/5, a larger fuscous mixed with whitish tuft of raised scales at upper angle of cell. Cilia whitish irrorated with minute specks of greyish fuscous. Hind wing and cilia whitish.

Female genitalia (Text-fig. 2): Ovipositor long, lobes minute. Ostium very wide, well sclerotized, cup-shaped, a strongly sclerotized limen. Ductus bursae fairly short; bursa copulatrix elongate bearing two signa, each with a pair of long prongs.

Type ♀: "Lord Howe Island, Mt. Lidgbird, 19.viii.1953". Genitalia slide B.M.3524.



FIGS. 1-3.—(1) Ventral views of male and female genitalia. *Lobesia eustales* sp. n., male.  
 (2) *Carposina euphanes* sp. n., female. (3) *Acrocercops tomia* sp. n., male.

The fascies of the fore wing and the structure of the female genitalia indicate affinities with the two New Zealand species *C. gonosemana* (Meyrick) and *C. epomiana* (Meyrick); but *euphanes* is distinguished by the solid marking at the base of the fore wing, and by the absence of the lateral and medial processes which project posteriorly from the ostium in the female genitalia of those two species.

## OECOPHORIDAE

*Elaeonoma liquida* (Meyrick)

*Eulechria liquida* Meyrick, 1914, Exotic Microlepidoptera, 1: 164.

One female example caught on the lower levels, "Lord Howe Island, 18. viii. 1953". The specimen is damaged due to having come unpinned while in transit, and the abdomen is missing.

This species is known from Queensland.

*Elaeonoma aneusema* sp. n.

♂ 11 mm. Labial palpus fuscous-black sprinkled with whitish scales, second segment narrowly ringed with white. Head, thorax, tegula and antenna greyish fuscous-black. Fore wing whitish heavily overlaid with greyish dark fuscous or mummy brown, a heavy mummy brown or fuscous suffusion at base, two conspicuous mummy brown or fuscous spots in middle at  $2/3$ , the lower obliquely distad of the upper, a similar slightly larger spot at end of cell, an inconspicuous mummy brown marking between this and the upper basal dot and a similar marking on dorsum a little before tornus and another on costa above and slightly beyond the outer discal spot, a rather diffuse mummy brown subterminal line from tornus to costal marking. Cilia cream-buff lightly irrorated basally with mummy brown. The coloration of the fore wing varies; in one example it is lighter and has a distinctly honey yellow appearance. Hind wing and cilia greyish cream buff. Abdomen and legs cream buff.

Male genitalia (Text-fig. 4): Valva with apex curved ventrad and with tip sharply pointed and slightly more sclerotized. Uncus flattened, triangular in outline, gnathus arms broad laterally, fused medially and abruptly tapered with point downturned. Transtilla a narrow weakly sclerotized band. Vinculum evenly rounded, no saccus. Aedoeagus long and curved, rather stout at middle, attenuated at ends, a very long internal cornutus, base of aedoeagus weakly sclerotized on one side and coiled.

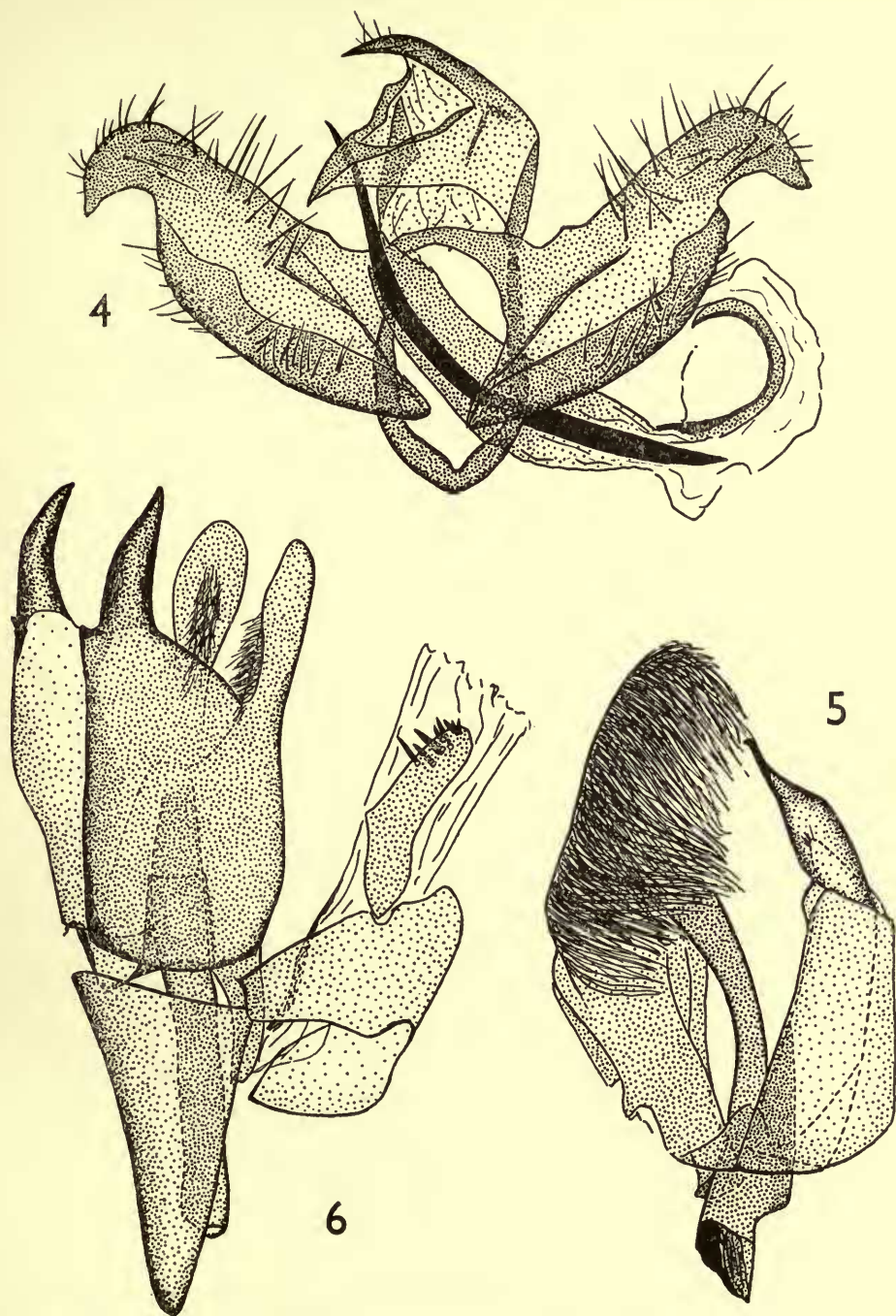
Type ♂: "Lord Howe Island, Mt. Lidgbird, 19. viii. 1953". Genitalia slide B.M.3774. Paratypes: 2 ♂, same data as type. All examples caught flying within the shelter of a cave-like overhang frequented by goats.

This species is near to *E. adocina* Turner, which is a slightly larger species occurring in Queensland.

## COSMOPTERYGIDAE

*Pyroderces anoista* sp. n.

♂ 11 mm. Labial palpus shining cream-buff, basal segment fuscous exteriorly, second segment narrowly ringed with fuscous apically and with a rather indistinct



FIGS. 4-6.—Male genitalia. (4) *Elaeonoma aneusema* sp. n., ventral view. (5) *Pyroderces anoista* sp. n., lateral view. (6) *Opogona euchaetes* sp. n., lateral view.

fuscous supramedial annulus, terminal segment broadly marked with dark fuscous on underside at middle and before apex. Head with frons shining cartridge-buff, vertex, thorax and tegula dark cream-buff, tegula flecked with brownish. Antenna whitish, annulate with dark fuscous, scape cream-buff overlaid with brownish. Fore wing cream-buff, a large pale reddish fawn marking at base edged outwardly with a thin black line, outwardly oblique from about  $1/6$  of costa, straight to beyond middle then curving dorsad, followed by a slight sprinkling of black scales, a small reddish fawn patch on costa at about  $1/3$ , a mixture of blackish and ochreous scales before apex, dorsum irregularly suffused with reddish fawn, a small wedge-shaped oblique reddish fawn marking from dorsum at  $1/3$  to about middle with a few black scales each side at the tip, an elongate longitudinal dash of reddish fawn in discal area confluent with a flattened ring of sparse black scales above, a heavy blackish streak at apex. Cilia greyish. Hind wing grey, cilia greyish. Legs cartridge-buff, heavily ringed with fuscous-black or dark mummy brown. Abdomen greyish fuscous above, shining cartridge-buff beneath, a small cartridge buff anal tuft.

Male genitalia (Text-fig. 5): Valva elongate, densely haired on inner side, apex evenly rounded. Gnathus with left half large, weakly sclerotized, tapered from middle to apex; right half small. Aedoeagus semimembranous, curved, widening at apex.

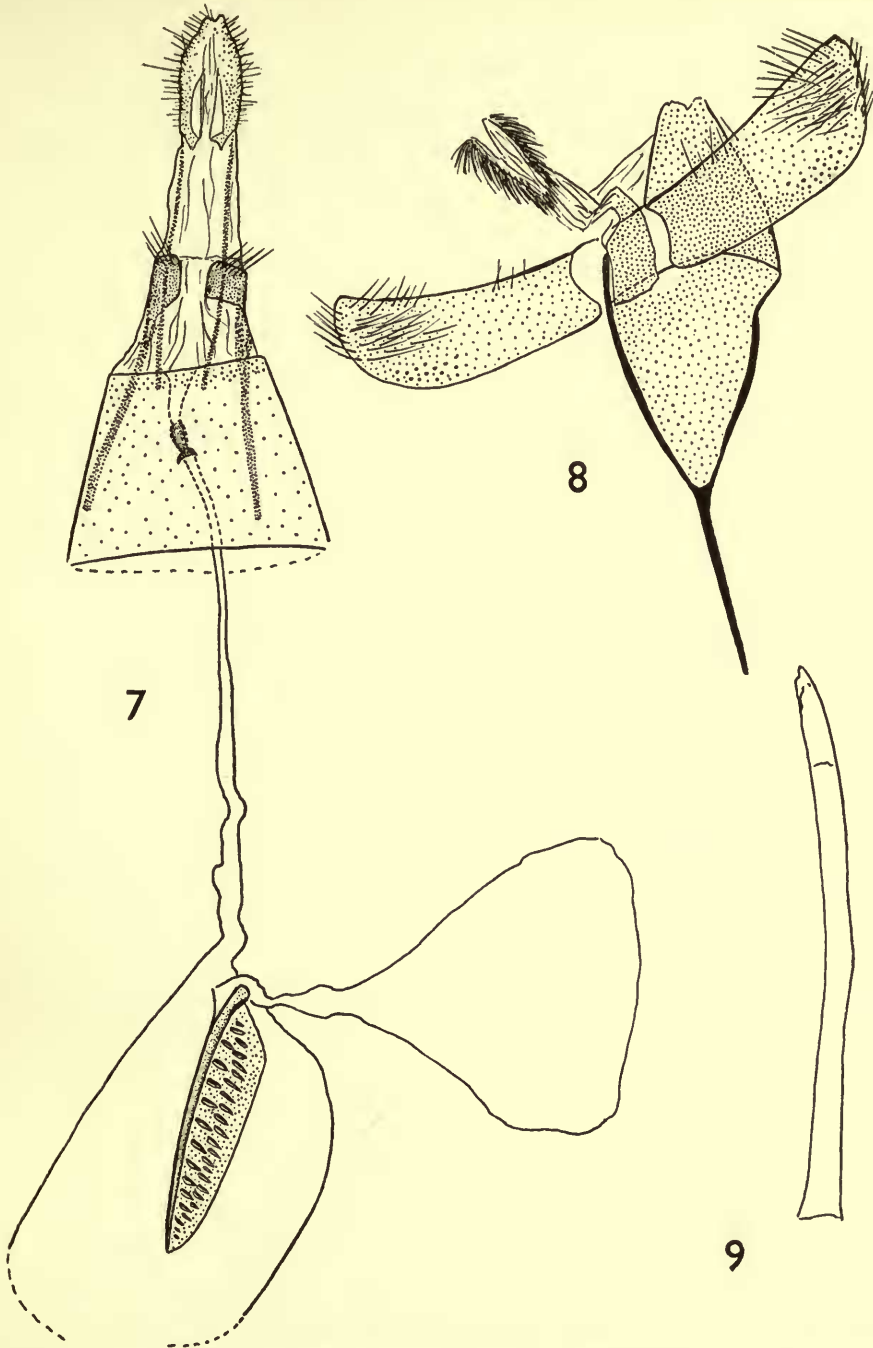
Type ♂: "Lord Howe Island, Mt. Lidgbird, 19.viii.1953". Genitalia slide B.M.3700. Paratype: 1 ♂, same data as type. Both examples caught among palms.

Allied to the Western Australian species *P. terminella* (Walker), but may be distinguished by the curved outer edge of the basal marking on the fore wing.

### *Batrachedra eurema* sp. n.

♀ 16 mm. Labial palpus cream-buff, second segment with two broad fuscous annuli narrowly separated at the middle and the second nearly reaching the apex, terminal segment dark fuscous on inner side and with outer side obliquely fuscous from middle to apex and with a narrow fuscous sub-basal bar. Head with frons cream-buff, a cream-buff area around eyes, vertex thickly clothed with loosely appressed, faintly iridescent, dark fuscous scales. Thorax and tegula cream-buff mixed with light fuscous. Fore wing extremely narrow, long and acutely pointed, ground colour cream-buff, costal area suffused with dark mummy brown, a broad dark mummy brown streak, faintly iridescent, along dorsum to beyond tornus thence gradually narrowing along termen to apex, plical stigma consisting of a small elongate black dash at  $1/4$  with lower edge touching dorsal streak, a narrow medial streak of ground colour lightly peppered with minute specks of fuscous. Cilia grey. Hind wing light grey, cilia greyish. Legs cream-buff irrorate exteriorly with fuscous. Abdomen fuscous above, cartridge buff below.

Female genitalia (Text-fig. 7): Ovipositor fairly broad, moderately setose. Ostium anterior, membranous. Ostial plate divided medially, caudal margins of the two halves rounded, well furnished with fine long setae. Ductus bursae narrow. Bursa copulatrix with a large signum in the form of a heavily sclerotized elongate plate



FIGS. 7-9.—Male and female genitalia. (7) *Batrachedra eurema* sp. n., female, ventral view. (8) *Decadarchis leucocyma* sp. n., male, ventral view. (9) *D. leucocyma* sp. n., aedoeagus, lateral view.

bearing uneven rows of teeth-like projections. Inception of ductus seminalis at entrance to bursa near signum.

Type ♀: "Lord Howe Island, Mt. Lidgbird, 19.viii.1953". Genitalia slide B.M.3727. One example only, caught among *Howea* palms.

This species is superficially similar to *B. epombra* Meyrick from South Africa and *B. macroloncha* Meyrick from Ceylon, but may be recognized by the distinct medial ground colour stripe on the fore wing.

#### GLYPHIPTERYIGIDAE

##### *Simaethis sycopola* Meyrick

*Simaethis sycopola* Meyrick, 1880, Proc. Linnean Soc. N.S. Wales, 5 : 211.

A male example caught flying actively in sunshine on the lower slopes of Mt. Lidgbird, "Lord Howe Island, 19.viii.1953". Genitalia slide B.M.3775.

An Australian species occurring in Queensland and New South Wales. The larva feeds on the leaves of *Ficus stipulata* according to Meyrick (loc. cit.) and on other species of *Ficus* (*Vide* Tillyard, 1926, *Insects of Australia and New Zealand*, p. 423).

#### ELACHISTIDAE

##### *Elachista archaeonoma* Meyrick

*Elachista archaeonoma* Meyrick, 1888, Trans. Proc. New Zealand Inst., 21 : 179.

*Elachista synthes* Meyrick, 1897, Proc. Linnean Soc. N.S. Wales, 22 : 333. *syn. nov.*

A common species in grassy places on Lord Howe Island. Five moths were caught flying very low amongst grass by the lagoon and others were seen, "18.viii.1953". Two more were caught on a grassy patch on Mt. Lidgbird, "19.viii.1953".

This species is recorded from Auckland, Nelson, Wellington and Dunedin in New Zealand (Meyrick, 1888, l.c.), and New South Wales, Melbourne and W. Australia (Meyrick, 1897, l.c.). It is doubtfully recorded from Norfolk Island in a collection made by Mrs. I. McComish (Hawkins, 1942, *Ann. Mag. nat. Hist.* ser. 11, 9 : 874).

The new synonymy above has been introduced after examination of the syntypes from Meyrick's collection in the British Museum (Natural History).

#### GRACILLARIIDAE

##### *Acrocercops tomia* sp. n.

♂ 8 mm. Labial palpus white, second segment suffused with fuscous exteriorly towards apex. Head and thorax white. Tegula white with an admixture of cream-buff anteriorly. Antenna dark fuscous. Fore wing narrowly elongate-lanceolate, light ochraceous-tawny, three transverse white markings edged with black, one at 1/3, the second at middle identical with the first and separated from it by an area of ground colour of much the same size, the third marking at 3/4 as broad on dorsum as the first two markings but narrower at costa, a much smaller white marking edged



with black scales from just before apex to tornus. Cilia greyish. Hind wing dark grey. Legs white with light ochraceous-tawny annuli.

- Male genitalia (Text-fig. 3): Valva semi-membranous, very broad at base, costa weakly sclerotized, an invagination containing specialized scales at the middle of the exterior ventral margin. Transtilla narrow. Aedoeagus weakly sclerotized, slightly stouter apically.

Type ♂: "Lord Howe Island, 18.viii.1953". Genitalia slide B.M.3783.

Superficially almost identical with the Eastern Australian species *A. antigrapha* Turner, from which it is separated by slight comparative differences in the male genitalia, having the valva more tapered apically, and the pocket in the ventral margin containing specialized scales rounded and not elongate as in *antigrapha*.

#### LYONETIIDAE

##### *Opogona euchaetes* sp. n.

♂ 16 mm. Labial palpus dark mummy brown exteriorly, shining greyish cream-buff interiorly. Front of head dark fuscous, fringe between antennae shining cream-buff with an admixture of fuscous basally, vertex, thorax and tegula dark fuscous, tegula slightly darker. Antenna cartridge buff suffused with dark fuscous basally, scape fuscous-black. Fore wing dark fuscous, basal half thickly overlaid with very small, narrow dark olive-buff scales, which give this part of the wing a matt appearance. Cilia pale ochreous. Hindwing pellucid at base, apex shining golden ochreous, middle of wing fuscous-black, a specialized area at base of costa bearing long, greyish cream-buff hairs. Cilia pale ochreous. Legs pale ochreous. Abdomen light fuscous.

Male genitalia (Text-fig. 6): Valva with costa free, rounded at apex, sacculus strongly sclerotized, produced distally to a stout prong with sharp points. Vinculum triangular, without saccus. Gnathus arms small, elongate and bearing a few heavy spine-like setae on inner side. Aedoeagus stout, cylindrical.

Type ♂: "Lord Howe Island, Mt. Lidgbird, 19.viii.1953". Genitalia slide B.M.3771.

In size and superficial appearance this species resembles *O. omosopa* (Meyrick), but the matt effect given to the basal part of the fore wing of the male by the small dark olive-buff scales makes it distinctive.

##### *Decadarchis leucocyma* sp. n.

♂ 12 mm. Labial palpus honey yellow, second segment and basal half of terminal segment suffused with fuscous exteriorly. Frons cartridge buff mixed with dark mummy brown and fuscous, vertex and thorax dark mummy brown mixed with fuscous. Antenna cartridge buff, thickened at middle, scape brownish. Fore wing (rubbed) narrow, elongate-lanceolate, greyish ochreous with diffuse brownish or dark fuscous markings and scattered brownish scales, a brownish marking at base, another on dorsum beyond middle, five or six outwardly oblique, thin, short white stripes from costa, first at middle, last just before apex, both very short, spaces

between stripes dark mummy brown, apex dark mummy brown. Cilia dark cream-buff. Hind wing light grey, cilia cream-buff. Legs cream-buff.

Male genitalia (Text-figs. 8 and 9): Valva weakly sclerotized. Tegumen short, rounded, narrowing caudad. Uncus not developed. Gnathus fringed with strong setae laterally. Saccus very long and thin.

Type ♂: "Lord Howe Island, Mt. Lidgbird, 19.viii.1953". Genitalia slide B.M.3782.

This species has been provisionally placed in the genus *Decadarchis* Meyrick near *D. subridens* Meyrick, a Fijian species, which it superficially resembles.

## II. NORFOLK ISLAND

Norfolk Island is one of the small isolated islands in the South Pacific at which we called on the voyage from Australia to the Solomons. We were fortunate enough to have an opportunity of spending a morning ashore while cargo was being unloaded.

We landed at Cascades, a rocky and uninhabited section of the coast on the opposite side of the island to Kingston. The regular landing place at Kingston was unusable due to a heavy swell. Hills and valleys wooded with the Norfolk Island pine, *Araucaria excelsa*, lie behind the cliffs at Cascades, forming a landscape which in some respects is reminiscent of parts of the North Downs in England. The present paper is based on material collected in this woodland.

For a small collection comprising forty-one specimens secured in rather hurried circumstances it has proved much more interesting than could be expected, and it is evident that much has yet to be learnt about the lepidopterous fauna of Norfolk Island. The material represents eight species, including five which are apparently new to science, one of which belongs to an apparently undescribed genus. Of the previously known species, two are endemic to Norfolk Island and are extremely rare in collections. A new genus is now described for one of them, *Tinea capnitis* Turner and attention is drawn to certain morphological differences in the other species, *Schoenotenes capnosema* Turner, which may possibly be of generic significance. The third known species is *Opogona omoscopa* (Meyrick), which, although it belongs to a genus well represented in the Indo-Australian region, is nevertheless characteristic of South Africa and the Madeiras and has undoubtedly been introduced to Norfolk Island by shipping.

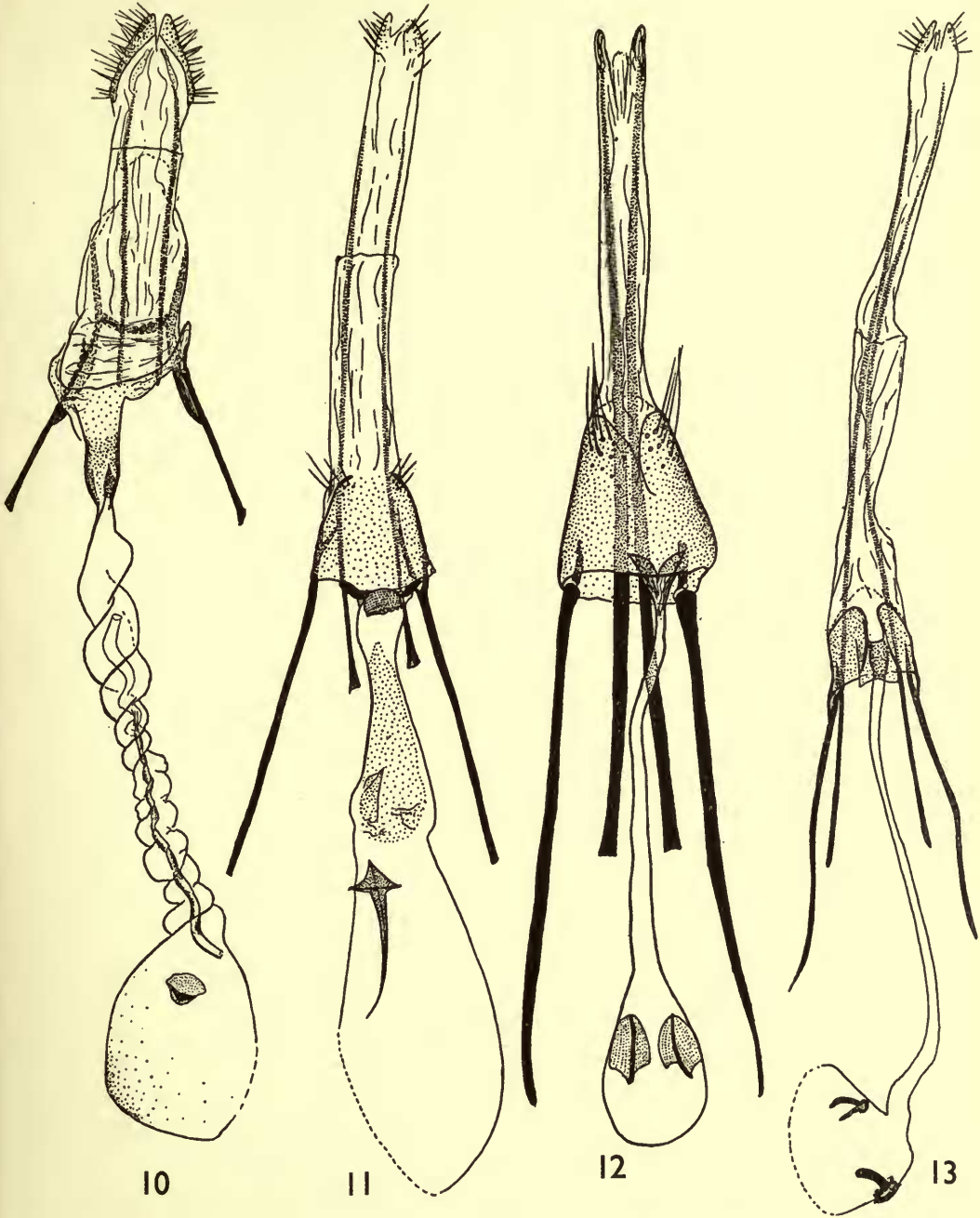
The collection is in the British Museum (Natural History), including the types and paratypes of the species described below. When making the descriptions, colour terms have in most instances been taken from Ridgway's *Color Standards and Color Nomenclature*.

### SCHOENOTENIDAE

#### *Schoenotenes capnosema* Turner

*Schoenotenes capnosema* Turner, 1918, Trans. roy. Soc. S. Aust., 42: 287.

One female example of this species was captured among dead, fallen branches of *Araucaria excelsa*, "Cascades, Norfolk Island, 26.viii.1953". Genitalia slide B.M.3691.



FIGS. 10-13.—Female genitalia. (10) *Schoenotenes capnosema* Turner. (11) *Comodica semiades* sp. n. (12) *Norfolkia hilderi* gen. n. sp. n. (13) *Opogona psola* sp. n.

This appears to be an aberrant species of *Schoenotenes*. In the fore wing vein 2 is more strongly curved at the base than is normal in the genus, the parting vein is represented by a fold only, and in the hind wing the stalking of veins 6 and 7 is longer than is usual and vein 7 goes to the costa and not to the apex as in the other known species. The female genitalia also appear to be somewhat atypical of the genus.

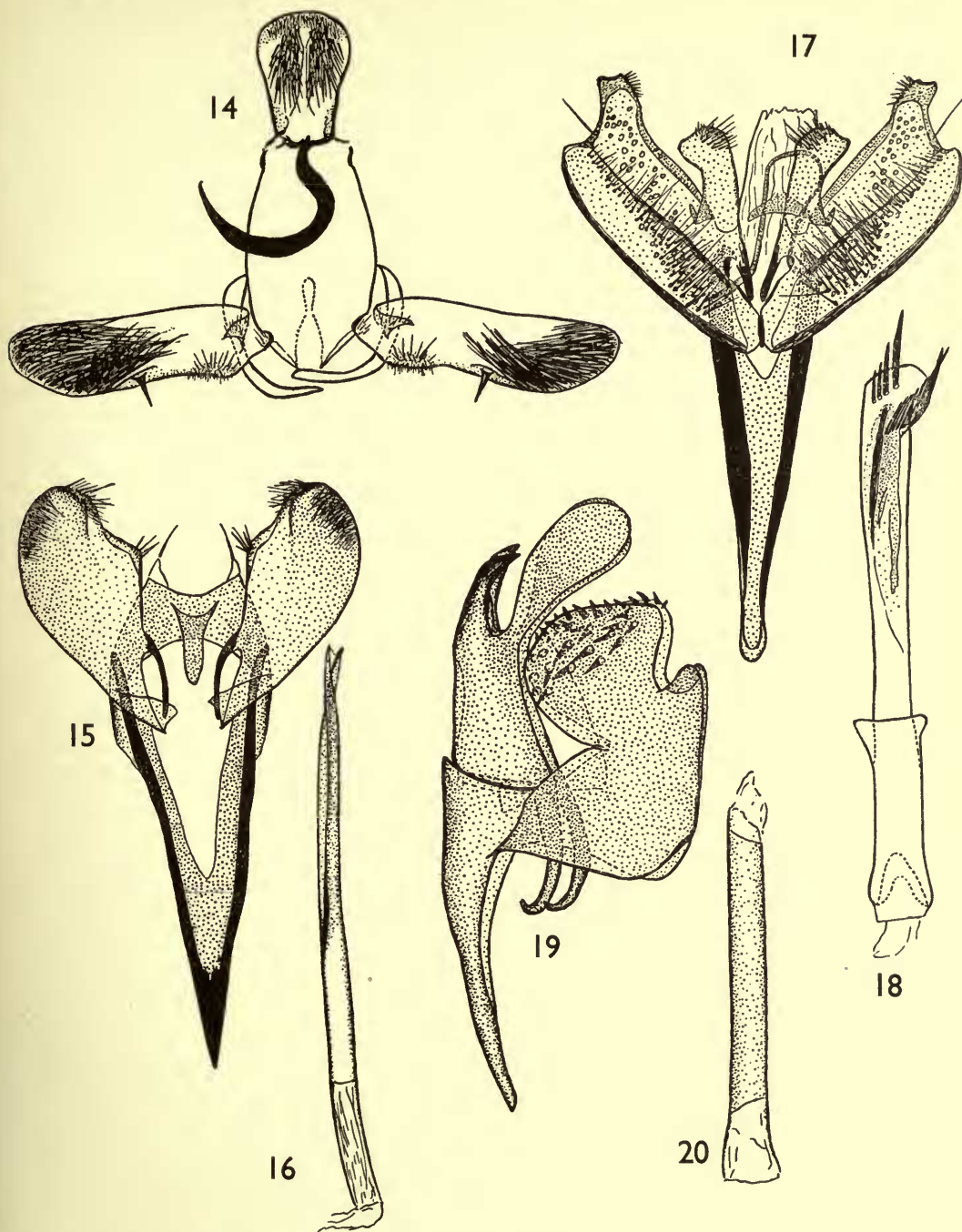
The venational and genitalic differences evident in the female of *capnosema* may indicate generic or subgeneric distinctness, but a proper evaluation of these characters must remain in abeyance until examples of the male can be obtained for study.

Female genitalia (Text-fig. 10): These have not previously been described or figured for this species. Ovipositor extensile, when fully extended the ends of the posterior apophyses are level with the ostium, lobes narrow, pointed and with apices close together, sparsely clothed with fine setae laterally. Anterior apophyses reaching to inception of ductus seminalis, connected to each other basally by a narrow strongly sclerotized transverse dorsal band. Ostium membranous, wide at mouth becoming a cylindrical tube weakly sclerotized as it narrows to enter ductus bursae, which is fairly long and narrow and is convoluted throughout its length and has an internal coiled cestum. Ductus bursae subspherical, signum small and tooth-like.

#### GELECHIIDAE

#### *Anisoplaca cosmia* sp. n.

♂ 16 mm. Labial palpus light cartridge buff above, warm buff below, basal segment and underside of second segment except apex overlaid with fuscous black, upperside of second segment with fuscous medial band, third segment lightly overlaid with light fuscous at base of underside and with a narrow fuscous supramedial band. Head, thorax (thorax rubbed), patagia and tegula cartridge buff, individual scales on head brownish at tips, patagia dark brown basally. Antenna cream-buff, finely ciliated along anterior margin, posterior margin with segment barred with fuscous basally; scape cartridge buff minutely irrorated with brownish, bearing a pecten of several long fuscous hair-like scales. Fore wing cartridge buff with diffused fuscous-black markings; anterior margin of costa irrorated with blackish, a blackish dash at 4/5 and a small black spot at base, an ochreous-buff suffusion below costa from near base to apex, four small black discal dot-like spots surrounded by whitish rings, first in disc before middle, second on fold rather before first, their rings confluent, third and fourth transversely placed and close together at 3/5, their rings confluent, a fifth spot not surrounded by a whitish ring immediately above the first discal in the ochreous-buff suffusion below costa, a cloudy whitish subterminal fascia from 4/5 of costa to tornus, dentate outwards in middle to termen, edged inwardly with fuscous, a heavy blackish dash at about middle touching the whitish rings of the outer discal spots and a large fuscous pretornal blotch on dorsum, a cloudy blackish terminal line. Cilia whitish along termen with a diffuse fuscous basal line, mixed with fuscous black around apex, wholly light fuscous on dorsum. Hind wing light grey, a long pale cartridge buff hair-pencil from base of inner margin. Cilia light cartridge buff, a



FIGS. 14-20.—Male genitalia. (14) *Anisoplaca cosmia* sp. n. (15) *Erechthias strigata* sp. n. (16) *E. strigata* sp. n., aedeagus. (17) *Comodica semiades* sp. n. (18) *C. semiades* sp. n., aedeagus. (19) *Opogona psola* sp. n. (20) *O. psola* sp. n., aedeagus.

greyish sub-basal line. Legs cream-buff, fore- and middle legs with wide fuscous annuli, hind leg irrorated with fuscous on underside.

Male genitalia (Text-figs. 14 and 21): Valva elongate, narrow, apex rounded, distal margin clothed with fine setae on innerside. Sacculus weak, a solitary strong spine-like seta projecting from inner margin. Uncus spatulate, broadly rounded apically, two parallel longitudinal rows of long setae on inner face. Gnathus arms very short, supporting a very large and heavily sclerotized hook. Aedoeagus with basal portion stout and somewhat bulbous, apical half constricted, widening slightly at apex and with a minute thorn-like projection at right angles to tip.

Type ♂: "Norfolk Island, Cascades, 26.viii.1953". One example only, caught at rest on the bole of *Araucaria excelsa*. Genitalia slide B.M.3787.

This species is very closely allied to the New Zealand species *A. archyrota* Meyrick. The markings and coloration of the fore wings of the two species are very similar, but they can be distinguished by the labial palpus, which in *cosmia* is fuscous-black to the apex on the underside of the second segment, while in *archyrota* only the basal two-thirds are fuscous-black. In *archyrota* the basal half of the valva of the male genitalia is very narrow and there is a triangular projection on the ventral margin beyond the middle which bears a small sclerotized point at the apex.

#### LYONETIIDAE

##### *Erechthias strigata* sp. n.

♂ 10 mm. Labial palpus light cartridge buff, second and terminal segments dark fuscous outwardly, a small apical tuft of raised scales on underside of second segment. Head, thorax, tegula and antenna light cartridge buff, an admixture of fuscous at middle and anterior margin of thorax and on tegula. Fore wing whitish cartridge buff, base of costa heavily suffused with fuscous, a thin sprinkling of fuscous scales from near base across middle of wing merging at  $2/3$  with a large distinctive patch of blackish fuscous which extends transversely from immediately below costa to a little beyond middle, the upper (costal) edge of the patch is outwardly oblique and is parallel with three narrow apical stripes, the outer one being the broadest and at the apex, the first stripe is separated from the blackish fuscous patch by a thin white line and a similar line separates the second and third stripes, a somewhat wider gap of ochreous-buff separates the first and second stripes, below the stripes a thin whitish line extends from the middle of the discal patch to the apex, a heavy fuscous-black dash from lower (dorsal) edge of discal patch to middle of termen, a few ochreous-buff scales at tornus. Cilia whitish, a small patch of ochreous-buff in the indentation below apex, cilia above apex tipped with fuscous. Hind wing light cartridge buff, a small fuscous dash at apex. Cilia light cartridge buff. Legs cartridge buff, fore leg blackish fuscous anteriorly, tibia of hind leg clothed with fine cream-buff hair.

Male genitalia (Text-figs. 15 and 16): Valva short, rounded distally, costa and distal margin clothed with fine hair, a close-set cluster of four setae at base of costa. Vinculum very long, narrow and with straight sides. Saccus short. Aedoeagus

cylindrical, long and straight, tip slender and pointed. Vesica with a sclerotized strand.

Type ♂: "Norfolk Island, Cascades, 26.viii.1953". Genitalia slide B.M.3827. Paratypes: 2 ♂, same data as type. Genitalia slide B.M.3785. All examples found in the crevices of the bark of *Araucaria excelsa*.

This species is recognizable by the blackish discal marking on the fore wing; it may be placed near the tropicopolitan species *E. zebrina* (Butler).

### *Comodica semiades* sp. n.

♂, ♀ 10-11 mm. Labial palpus whitish cartridge buff, narrowly fuscous-black exteriorly to near apex, a few scattered dark fuscous bristles exteriorly on second segment. Head cartridge buff, sometimes an admixture of fuscous between antennae and on vertex. Thorax and tegula cartridge buff, female with a small fuscous spot in middle of thorax and a similar spot each side of the medial line in the anterior margin of thorax. Antenna greyish, scape cartridge buff with a longitudinal fuscous line anteriorly; male with a deep notch at base. Fore wing cartridge buff or warm buff, irregularly suffused with ochreous buff and with dark brown and fuscous-black markings; the sexes are slightly dimorphic and the female is usually of darker coloration and is more heavily marked than the male; five outwardly oblique fuscous-black or dark brown streaks from costa, in the male the first or basal of these streaks is very weak or absent, a similar outwardly oblique streak from middle of dorsum weak in the male and strong in the female, anterior edge of costa fuscous-black at base, in the male the whole of the basal half of the wing excepting the costa is usually a unicolorous cartridge buff or warm buff without markings, while in the female it is irregularly marked with dark brown or fuscous-black streaks, in both sexes the fourth costal streak is wedge-shaped and is followed by a short line of silvery scales to middle where it meets at right-angles a heavy black dash which extends towards termen and is surrounded outwardly by a wide area of dark ochreous buff, a broad suffusion of dark ochreous buff extends inwards from the line of silvery scales nearly to middle, in the female the basal and second costal streaks extend across this and together with the streak from middle of dorsum converge a little below (dorsad) the silvery line and are followed by a small patch of white scales, termen suffused with fuscous sometimes with a faint purplish iridescence, a small black spot below apex. Cilia greyish cartridge buff, two straight lines of fuscous-black projecting from apex, the upper one rather obliquely upwards and the lower one obliquely downwards, beneath the latter the cilia are excavated by a curved wedge-shaped indentation. Hind wing greyish. Cilia greyish cartridge buff, whitish basally, a thin black line projecting from apex.

Male genitalia (Text-figs. 17 and 18): Valva elongate, distal margin excavate, apex somewhat produced, obtuse, slightly thickened and indented ventrally, a short arm-like process (? costa) arising from base of valva, knobbed at the end and clothed with a few spine-like setae. Aedoeagus straight, cylindrical. Vesica armed with rows or clusters of straight, thorn-like cornuti.

Female genitalia (Text-fig. 11) : Ovipositor long, extensile, lobes slightly dilated, obtuse, setose. Ostial plate hardly sclerotized, elongate, a few fine setae on caudal margin laterally. Ostium rounded, situated on anterior margin, with lateral slightly raised oblique sclerotized ridges. Ductus bursae short, widening and soon entering bursa copulatrix which is elongate and bears a cross-shaped signum.

Type ♂ : " Norfolk Island, Cascades, 26.viii.53 ". Genitalia slide B.M.3780. Paratypes : 5 ♂, 9 ♀, same data as type. Genitalia slides B.M.3745, B.M.3746 and B.M.3793. All examples caught on the dead wood of a fallen *Araucaria excelsa*.

The peculiar streaked and variegated ornamentation of this species, particularly of the female, likens it superficially to the Australian species *C. tetracercella* Meyrick, which is recognizable by the four or five oblique fuscous stripes on the dorsum of the fore wing.

### *Opogona omoscopa* (Meyrick)

*Hieroxestis omoscopa* Meyrick, 1893, Proc. Linnean Soc. N.S.Wales, 17 : 567.

One male example captured among fallen branches and litter beneath *Araucaria excelsa*, " Norfolk Island, Casacades, 26.viii.1953 ".

This species has a wide distribution and is known from South Africa, Madeiras, Rodriguez, Mauritius, East Australia, New Zealand and Lord Howe Island. It belongs to a group characteristic of South Africa and the Madeiras. The habit of the larva of feeding in dead stems of sugarcane and other plants and, according to Meyrick (loc. cit.) on cork, has no doubt led to its importation to Norfolk Island.

### *Opogona psola* sp. n.

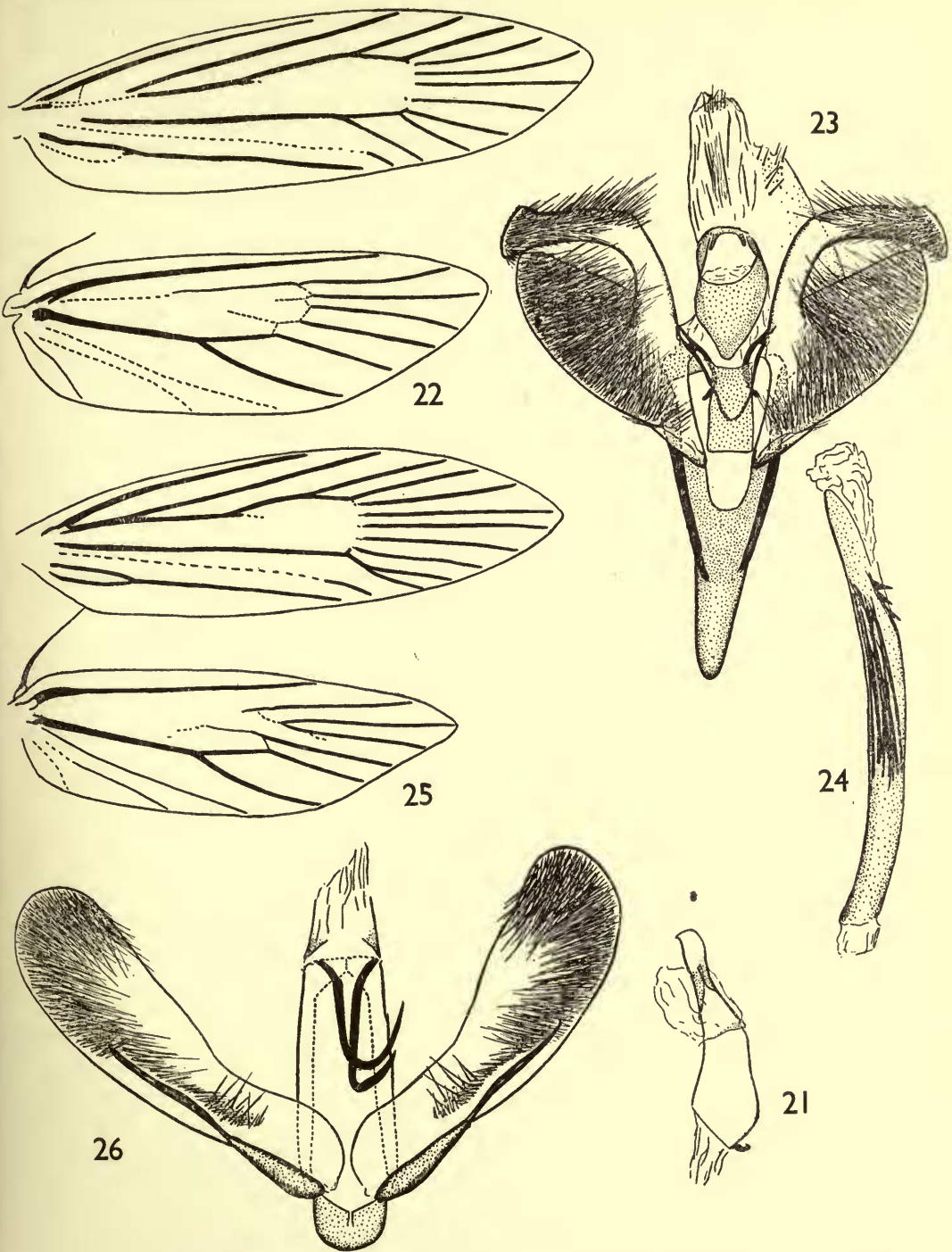
♂, ♀ 9-12 mm. Labial and maxillary palpi, front of head and antenna ivory yellow, labial palpus dark brown exteriorly, frons smooth and shining, vertex, thorax and antennal scape olive-brown. Fore wing olive-brown with a slight bronzy sheen. Cilia buffy brown. Hind wing shining brassy grey, a very slight trace of iridescence along costa and dorsum extending into cilia. Cilia light buffy brown. Legs ochreous, innerside of fore leg dark olive-brown. Abdomen greyish ochreous above, whitish ochreous beneath.

Male genitalia (Text-figs. 19 and 20) : Valva long and narrow, apical half somewhat paddle-shaped. Sacculus strong, narrow, distal half free, sharply pointed. Saccus moderate, tapering to a point. Tegumen rounded, anterior margin deeply cleft. Uncus bifid, a pair of vestigial rounded lobes. Gnathus a pair of subquadrate lobes, innerside of distal area studded with heavy setae. Aedoeagus cylindrical, apex obliquely pointed.

Female genitalia (Text-fig. 13) : Ovipositor very long, extensile, lobes slightly dilated, setose at apices. Ostial plate weakly sclerotized, caudal margin deeply incised, forming a narrow groove to ostium, which is a small rounded opening situated in middle of plate. Ductus bursae moderately long, membranous and narrow. Bursa copulatrix subspherical, two stout thorn-like signa.

Type ♂ : " Norfolk Island, Cascades, 26.viii.53 ". Genitalia slide B.M.3822.





FIGS. 21-26.—(21) *Anisoplaca cosmia* sp. n., aedeagus. (22) *Empaesta* gen. n., wing venation. (23) *Empaesta capnitis* (Turner) comb. n., male genitalia, (24) *E. capnitis* (Turner) comb. n., aedeagus. (25) *Norfolkia* gen. n., wing venation. (26) *Norfolkia hilderi* gen. n. sp. n., male genitalia.

Paratypes: 13 ♂ and ♀, same data as type. Genitalia slides B.M.3729 and B.M.3788. All the above examples were collected from the thick carpet of dead twigs and branches beneath the *Araucaria excelsa*.

This species is closely allied and superficially similar to the Hawaiian species *O. aurisquamosa* Butler, which is slightly larger, and has an extremely long saccus in the male genitalia.

## TINEIDAE

**NORFOLKIA** gen. n.

Labial palpus porrect, extending well beyond head, terminal segment as long as or longer than second, second segment roughened beneath and with apical bristles, terminal segment complanate, grooved beneath. Maxillary palpus not folded. Tongue short. Antenna filiform in both sexes. Head with scales appressed. Fore wing (Text-fig. 25) elongate-ovate, pointed, all veins present, 1b furcate, 2 and 3 stalked from angle, 7 to costa near apex, indication of parting vein in cell. Hind wing (Text-fig. 25) trapezoidal, pointed, all veins present, 2 from well before 3, 3 and 4 separate, 4 and 5 parallel, 5 and 6 connate or short stalked, 6 to apex.

Male genitalia (Text-fig. 26): Tegumen elongate, uncus membranous. Gnathus paired. Valva simple, sacculus weakly developed. Vinculum rounded, without saccus. Aedoeagus cylindrical.

Female genitalia (Text-fig. 12): Ovipositor moderately strong, extensile, lobes poorly developed. Ostial plate moderately sclerotized, tapered caudally. Ostium external, small, membranous. Bursa copulatrix with double signum. Apophyses very strong.

Type species: *Norfolkia hilderi* sp. n.

A genus apparently endemic to Norfolk Island. Near to *Tinea*, but distinguished by the lack of a saccus in the male genitalia.

***Norfolkia hilderi*** sp. n.

♂ 14 mm., ♀ 16 mm. Upperside of labial palpus cartridge buff, apex of third segment lightly tipped with ochreous buff; underside ochreous-buff, terminal segment heavily irrorated with fuscous-black; second segment with several dark brown apical bristles laterally. Lower part of frons cartridge buff, upper part and vertex ochreous-buff irrorated with dark brown. Thorax and base of tegula dark mummy brown, tip of tegula cream buff irrorated with brown. Antenna cream buff, antennal segments annulate basally with dark brown, scape ochreous-buff, brown at base anteriorly. Fore wing cream-buff irrorated with mummy brown, markings dark mummy brown lightly sprinkled with ochreous-buff, a broad elongate somewhat diffuse marking at base of costa having outer margin strongly emphasized and reaching to plical fold where it converges with the inner corner of a heavy quadrate marking on dorsum at 1/3, a transverse marking on costa at 1/3 reaching to middle, a much smaller marking on costa a little beyond 1/2 and a similar pretornal marking opposite on

dorsum, an inwardly oblique variable dark mummy brown preapical fascia conspicuous on costa becoming diffuse and indistinct towards middle and very weak or disappearing towards tornus, some small dots and flecks of brown along costa interspersed between the larger markings, termen mummy brown or mummy brown mixed with dark ochreous-buff. Cilia cartridge buff mixed with brown. Hind wing thinly scaled basally, dark grey with a purplish iridescence distally. Cilia greyish cartridge buff. Legs cream-buff with coloration lighter proximally; fore leg with distinct fuscous-black annuli; middle leg femur lightly overlaid with fuscous on underside, tibia fuscous-black to near apex, tarsus with broad fuscous-black annula; hind leg with tibia and spurs outwardly suffused with dark fuscous, tarsus with broad dark fuscous annuli. Abdomen dark fuscous above and at sides, cream-buff below; male with a small dark fuscous anal tuft.

Male genitalia (Text-fig. 26): Valva weakly sclerotized, slightly constricted and clothed with a few fine setae a little beyond base, apex rounded. Sacculus very narrow, thin and acutely pointed distally. Gnathus arms thin curved rods, acutely pointed. Vinculum evenly rounded. Aedoeagus a straight cylindrical tube, slightly broader at base, apex obliquely pointed.

Female genitalia (Text-fig. 12): Ovipositor lobes convoluted, weakly sclerotized. Ostial plate moderately sclerotized, broad anteriorly, tapering, caudal margin with a deep medial cleft, rounded laterally and furnished with a few scattered setae. Ostium situated on anterior margin of plate, very small and thinly membranous. Bursa copulatrix subspherical, small; signa shield-like with strongly sclerotized longitudinal keels. Posterior apophyses stout and very strongly sclerotized, extending to bursa.

Type ♂: "Norfolk Island, Cascades, 26.viii.53". Genitalia slide B.M.3784. Paratypes: 1 ♂, 1 ♀, same data as type. Genitalia slide B.M.3689. On the bark and rotten wood of a fallen *Araucaria excelsa*. A number of empty pupa cases were found which are believed to belong to this species.

Superficially this species is reminiscent of the palaeartic species *Nemapogon parasitella* (Hübner) but the structure of the male genitalia indicates a closer affinity to the genus *Tinea*.

I take pleasure in naming this interesting species after Captain Brett Hilder, who is well known in the islands of the South West Pacific.

### *EMPAESTA* gen. n.

Labial palpus porrect, moderately long, about twice length of head, second segment about twice as long as third, roughened beneath, a longitudinal row of bristles laterally. Maxillary palpus long, folded. Tongue vestigial. Head wholly rough haired, thorax smooth. Antenna in male shortly ciliate, scape short and with a weak pecten. Ocellus absent. Hind tibia clothed with long hair posteriorly, a dense fringe of hair between the two pairs of spurs anteriorly. Fore wing (Text-fig. 22) all veins present, 1b strongly furcate, 1c present at margin only, veins arising from cell separate, 2 from

well before angle, 3 from angle, 4 approximate, 7 to costa, 11 from near base. Hind wing (Text-fig. 22) all veins present, separate, 7 to costa.

Male genitalia (Text-figs. 23 and 24): Valva with an arm-like costal process arising from base. Tegumen weak, narrow. Uncus and gnathus vestigial, membranous. Anellus cylindrical. Vinculum long and narrow, produced to a moderate saccus. Aedoeagus tubular.

Type species: *Tinea capnitis* Turner, 1918, Trans. roy. Soc. S. Aust., 42: 288.

The venational, palpal and other structural characters place this genus in the family Tineidae near the composite genus *Tinea*. The morphology of the male genitalia indicate affinities with the Lyonetiidae, and the present placing of the genus must therefore be considered as provisional until these two families become better known.

***Empaesta capnitis* (Turner), new combination.**

*Tinea capnitis* Turner, loc. cit.

2 ♂: "Norfolk Island, Cascades, 26.viii.53". Genitalia slide B.M.3769. Both examples captured among *Araucaria excelsa*.

Male genitalia (Text-figs. 23 and 24): Valva subtriangular, thickly clothed with fine hair on inner side, costal arm very strongly developed, elbowed, slightly broader and covered with fine hair at apex, truncate. Vinculum and saccus combined to form a continuous long narrow V-shaped structure. Aedoeagus with three external pre-apical teeth, a dense internal sheaf of long thin cornuti.



26 APR 1956